ENVIRONMENTAL ASSESSMENT

CUMULATIVE IMPACTS OF AIRCRAFT REALIGNMENTS AT GEORGE AIR FORCE BASE, CALIFORNIA

31 JULY 1989

PREPARED BY

Air Div

ENVIRONMENTAL PLANNING AND COMPLIANCE
(831 CSG/DEV)
GEORGE AIR FORCE BASE, CALIFORNIA 92394-5000

Air Force
Environmental Planning Division
(HQ USAF/CEVP)

Room 5B269
1260 Air Force Pentagon
Washington, DC 20330-1260

16 JUL 93

MEMORANDUM FOR DTIC (Acquisition)
(ATTN: Matt Mauby)

SUBJ: Distribution of USAF Planning Documents Forwarded on 1 JULY 93

All the documents forwarded to your organization on the subject date should be considered Approved for Public Release, Distribution is unlimited (Distribution statement A).

Mr. Jack Bush, GM-14
Special Projects and Plans
703-697-2928
DSN 227-2928

TABLE OF CONTENTS

TABLE OF CONTENTS (cont)

TABLES

FIGURES

EXECUTIVE SUMMARY

PURPOSE

This environmental assessment (EA) examines the environmental impacts of inactivating the 563 Tactical Fighter Squadron (TFS) at George Air Force Base (AFB), located in the Mojave Desert of Southern California. The document was prepared pursuant to Section 102 of the National Environmental Policy Act (NEPA), Public Law (PL) 92-190, as implemented by regulations promulgated by the President's Council on Environmental Quality (CEQ) and Air Force Regulation (AFR) 19-2. The EA was also prepared in compliance with the California Environmental Quality Act.

Since the alternatives to the proposed action, including the no action and delay action alternatives, are not considered feasible, this document only examines the potential environmental impacts near George AFB of deactivating the 37 Tactical Fighter Wing (TFW). This action will involve the drawdown of 24 Primary Aircraft Authorization (PAA) of combat-coded F-4E aircraft in support of the 563 TFS, and the loss of 745 personnel authorizations.

BASELINE DATA

Information on local physical resources was collected from both on- and off-base sources. Documents referenced and persons and agencies contacted are listed in Sections 6 and 7.

SUMMARY OF IMPACTS

All environmental impacts of inactivating the 37 TFW would be negligible or slightly beneficial, although most positive impacts resulting from the aircraft drawdown would be of such short duration that they would become negligible in the long term.

The proposed action would have a negligible effect on most of the socioeconomic resources within the surrounding communities. Reductions in employment, income, and housing demand may create short-term impacts in the local area. However, socioeconomic impacts of the proposed action would be offset by the continuing growth in jobs and influx of new residents to the area.

CONCLUSIONS

The proposed aircraft drawdown would facilitate the ability of the United States Air Force (USAF) to retire the aging F-4E aircraft and would aid in reducing operating costs for Tactical Air Command (TAC). The cost saving benefit to TAC could lead to costs incurred by the local communities due to out-migration of personnel; however, the socioeconomic impacts of the drawdown were assessed as not significant since they are short-term in view of the high rate of community growth. The proposed action would have no significant impact on the biophysical environment. The general result of this EA supports a finding of no significant impact.

1.0 PURPOSE AND NEED FOR THE ACTION

The USAF proposes to drawdown 24 PAA of combat-coded F-4E aircraft in the 37 TFW at George AFB, California, in Fiscal Year (FY) 90/1. The purpose of this drawdown is twofold: First to retire the aging F-4E aircraft from the Air Force inventory, and second to reduce operating costs for TAC.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Inactivation of the 37 TFW (563 TFS)

The USAF proposes to deactivate the 37 TFW in FY 1990. This action would result in removing 24 combat-coded F-4E aircraft in the 37 TFW in FY 90/1. As a result, the 563 TFS will deactivate, and the 561 TFS and the 562 Tactical Fighter Training Squadron (TFTS) will be incorporated into the 35 TFW. Table 2-1 shows the drawdown schedule.

TABLE 2-1

SCHEDULE OF 37 TFW F-4E AIRCRAFT DRAWDOWN

Squadron	Aircraft	FY 89/1	FY 89/2	FY 89/3	FY 89/4	FY 90/1
561 TFS	F-4E (CC)	12				0
563 TFS	F-4E (CC)	12				0

Source: HQ TAC/XPPB

This action would reduce personnel authorizations at George AFB by 745. Table 2-2 shows the total personnel reductions.

TABLE 2-2

37 TFW Personnel Reductions

	PPE	BOS	TOTAL
Officer	- 93	- 0	- 93
Enlisted	-649	- 0	-649
Civilian	- 3	- 0	- 3
	-745	- 0	-745

Notes: 1. Primary Program Element (PPE) refers to personnel assigned to directly support the 37 TFW mission.
2. Base Operating Support (BOS) are Base personnel who indirectly support the mission in terms of Base operations. Note: There will be no reductions in this category.

Source: 831 AD/MET

2.2 Alternatives to the Proposed Action

2.2.1 No Action

This alternative is not a viable option. This drawdown is required to help meet Congressionally mandated cuts in the Department of Defense (DOD) budget.

2.2.2 Delay Action

This option is not feasible. Congressionally mandated budget cuts must be met for the current FYDP. Delaying this action would further complicate the reduction schedule at a later date.

2.2.3 Alternative Unit

This option is not feasible because the 37 TFW is the last unit of aging F-4E aircraft that has not previously been scheduled for conversion.

2.3 Scope of the Environmental Review

This EA is prepared pursuant to Section 102 of the NEPA of 1969 (PL 91-190), as implemented by regulations promulgated by the President's CEQ and AFR 19-2. The principal objectives of NEPA are to build into the decision making process an appropriate and careful consideration of environmental aspects of proposed actions and to make environmental information available to public officials and citizens before decisions are made and actions are taken.

The proposed action would enable the USAF to meet Congressionally mandated budget cuts through the deactivation of the 37 TFW and allow for the retirement of aging F-4E aircraft from the USAF inventory. Since the alternatives to the proposed action, including the no action and delay action alternatives, are not considered feasible, this document only examines the potential environmental impacts near George AFB of deactivating the 37 TFW.

3.0 LOCATION, HISTORY, CURRENT ORGANIZATIONS AND OPERATIONS

George AFB is one of 18 TAC bases in the USAF. The 831 Air Division (AD) exercises command over the multiple missions of the installation.

3.1 Location of George AFB

George AFB is located in the High Desert region of Southern California. The Base is adjacent to the cities of Victorville and Adelanto, 90 miles east of Los Angeles and 36 miles north of San Bernardino. The City of San Bernardino is the county seat for San Bernardino County, in which George AFB is located. Figures 3-1 and 3-2 show the regional and area locations of George AFB.

The Base, which originally occupied 2,200 acres, now comprises 5,347 acres. The land is characterized as fairly level, except for the area nearest the Mojave River, which is to the east of the Base. The incorporated communities of Adelanto and Victorville are adjacent to the Base on the west and south-southeast sides respectively. However, except for development in central Adelanto, the area immediately surrounding the Base can be characterized as rural. The Base consists of runways, industrial areas, family housing and dormitories, two schools, a hospital and other support facilities. Figure 3-3 shows the site plan of the Base.

3.2 History

3.2.1 History of George AFB

George AFB, originally called Victorville Army Airfield, was established in 1941. Later it was known as the Victorville Army Flying School, Victorville Army Air Field, and Victorville AFB. It became George AFB on 2 June 1950, renamed in honor of the late Brigadier General Harold H. George.

General George, a World War I fighter ace, was killed in an aircraft accident at Darwin, Australia, 30 April 1942. At that time he was Chief of Staff, Far Eastern Air Forces.

During World War II, pilots and bombardiers were trained at George AFB. Training began in February 1942 with AT-9s, AT-6s, AT-17s, AT-11s and BT-13s, with the first class of pilots graduating in 1942. George served as a

training base for a number of aircraft during World War II. The Base was placed on standby status at the end of the War in October 1945, was assigned to the Air Technical Service Command and used for storage of airplanes until 1948. It was during this period that the USAF was formed.

FIGURE 3-1

GEORGE AIR FORCE BASE

REGIONAL MAP

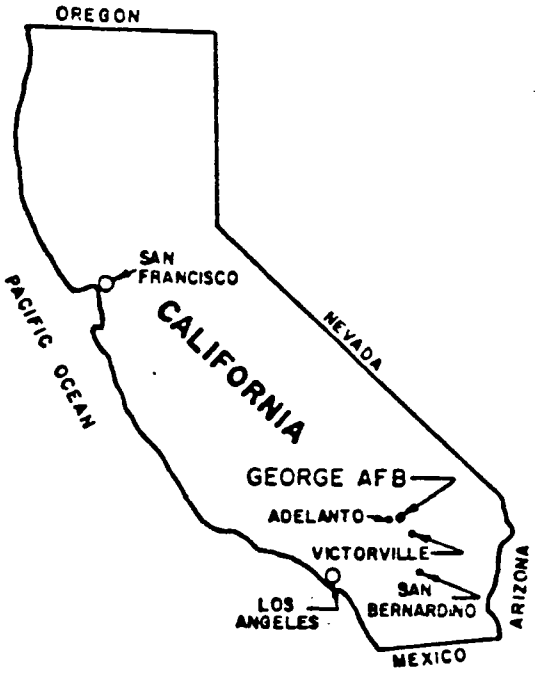


FIGURE 3-2

GEORGE AIR FORCE BASE

AREA MAP

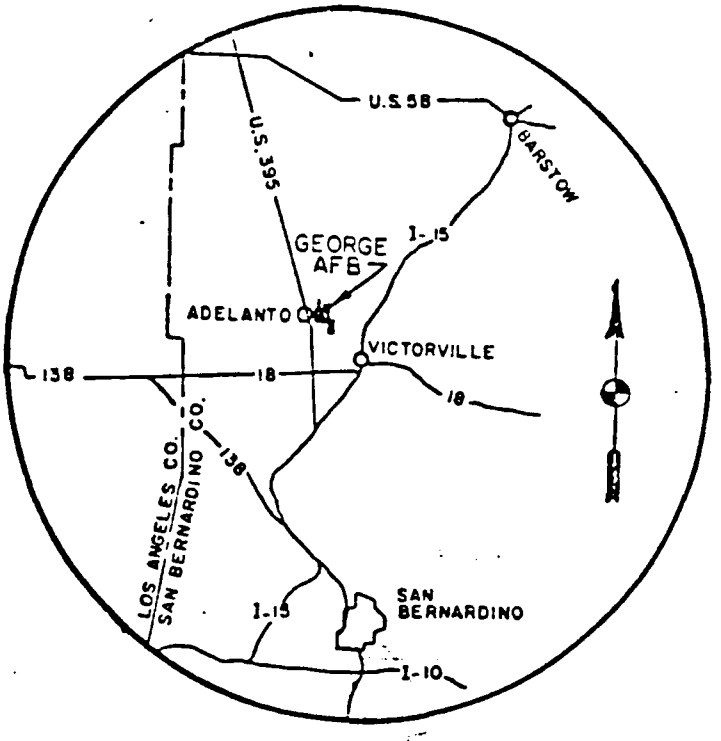
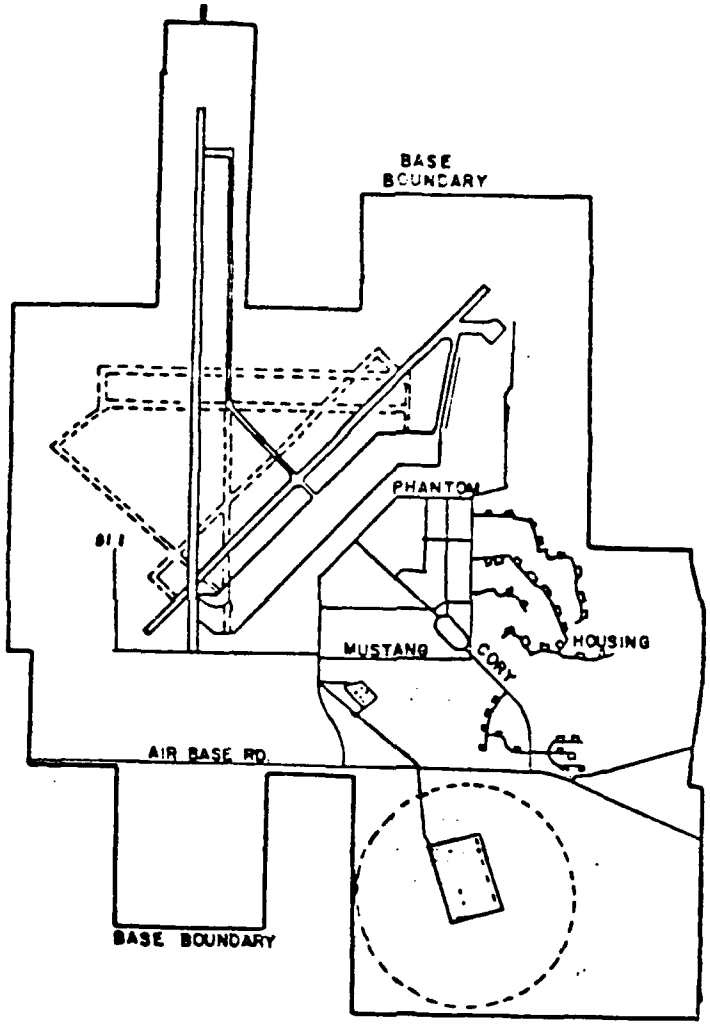


FIGURE 3-3

GEORGE AIR FORCE BASE

SITE PLAN



The first jet fighter aircraft arrived here in 1950 with the First Fighter Interceptor Wing (FIW). George has hosted a continuing succession of jet fighter aircraft, including the F-86, T-33, F-100, F-106, F-105D and all of the Air Force's F-4 "Phantom II" models.

In October 1971, the 35 TFW was transferred from Phan Rang Air Base, Vietnam to George AFB, replacing the former host wing. It has been on continuous duty here since that time.

Its mission of training F-4 aircrews has changed little since 1971. The F-105G "Wild Weasel" arrived in 1973, while the first F-4C Weasel arrived two years later.

By October 1977, Headquarters (HQ) Tactical Training George was activated while the 35 TFW continued to perform host wing assigned duties with six flying squadrons.

The first F-4G Advanced "Wild Weasel" arrived April 1978. The 35 TFW then became the first such unit in the Air Force assigned F-4Gs with both operational and training missions. The G-model Weasels continued to arrive until the Base became an all-"Phantom" force in the late summer of 1980.

The 831 AD was activated in 1957 and inactivated in 1971. Tactical Training George was later activated in 1977, and inactivated during December 1980. The 831 AD was reactivated during December 1980 and has served as the senior unit for the installation since that time.

The 37 TFW was activated and assumed the F-4G Weasel mission from the 35 TFW 30 March 1981. The 35th's mission is presently to train German and U.S. F-4 aircrews through two tactical squadrons flying the F-4E.

On 12 February 1982, the 39 TFS was reactivated under the 35 TTW, following approximately 18 months between missions from training F-105G and F-4G aircrews to its new "Pave Spike" mission using laser-guided technology. The 39th Cobras were deactivated at George 11 May 1984.

The 27 Tactical Air Support Squadron (TASS) became part of the George family, as a tenant, 14 May 1984. The unit is a part of the 602 Tactical Air Control Wing at Davis Monthan AFB, Arizona. The 27 TASS's mission is centered around forward air control, using the OV-10 Bronco.

The Air Warrior program began in late 1981 as an exercise titled Coronet Zap. On 1 May 1988, the Air Warrior Program was placed under the command and control of the 35 TTW commander. Today, the Air Warrior program provides close air support and limited battlefield air interdiction training for 500 aircrews and 70 tactical air control parties annually. Air Force aircrews and tactical control personnel support heavily-armored ground battles involving up to 6,000 combatants at the National Training Center (NTC), Fort Irwin, California. Air Warrior is a total force program which includes participation by 36 active and Air Reserve Force units in 14 annual 18-day exercises.

Today, the Base has two primary fighter wings, the 35th and 37th, both under the operational control at the Commander, 831 AD. Also assigned to the division is the 831 Combat Support Group (CSG), 831 Medical Group (Med Gp) and Deputy Commander for Resource Management (RM).

The 35 TTW is comprised of the 20 TFTS, tasked primarily to train German aircrews, the 21 TFTS, and Air Warrior. The 37 TFW is comprised of the 562 TFTS, providing worldwide Wild Weasel replacement pilot training, and the 561 and 563 TFSs, both operationally combat-ready. The 563 TFS is also part of the worldwide United States Central Command-Air Forces.

The 831 CSG has charge of all the normal host duties, such as operations and training, audiovisual services, small arms marksmanship, services, security police and civil engineering. Additionally, the 831 CSG is responsible for ensuring that the Base is in compliance with all environmental regulations.

Accounting and finance, budget, contracting, supply and transportation functions are under the command of the 831 AD/RM. The primary Base tenants include 2067 Communications Squadron, Detachment (DET) 12, 25th Weather Squadron, the 516 Field Training Detachment, DET 5, 4443 Test and Evaluation Group (TEG) and DET 1, 144 FIW, under the control of the California Air National Guard (ANG), headquartered at Fresno. The ANG unit flies the F-4 as part of the air defense mission of TAC.

Currently assigned aircraft include the F-4E Phantom II fighter, the F-4G Advanced Wild Weasel, the OV-10 Bronco, and the ANG F-4Ds.

There are approximately 5,600 military and 600 civilian employees assigned to George.

3.2.2 History of the F-4E

The McDonnell Douglas F-4 "Phantom II" is a two-place, supersonic, long-range, all-weather fighter. The twin engine Phantom is a mainstay of the TAC fighter force, complementing such other combat aircraft as the F-15 Eagle, F-16 Fighting Falcon and the A-10 Thunderbolt II.

The F-4 is a prime example of TAC's tactical air force concept of having combat-ready fighter aircraft stationed around the world ready to deploy at an instant's notice anywhere in the world, to set up at a "bare base" and to start flying operational missions within 48 hours. So important is this concept that TAC has adopted as its motto "Readiness Is Our Profession."

The Phantom was first developed for the U.S. Navy in the mid-1950s. The USAF flew the first F-4C in May 1963. It was then the fastest, highest flying operational tactical fighter in the active USAF inventory.

The F-4E first arrived on-base in early to mid-70s. The F-4E was developed as a multi-role fighter capable of performing counter air, close air support and interdiction missions. An internal 20mm Vulcan multibarrel gun was installed, together with an improved fire control system and an additional internal fuel tank. Loading edge slats were retrofitted to all of the F-4E models to improve maneuverability. In early 1973, some F-4Es were fitted with Northrop's Target Identification System Electro Optical (TISEO), a telescope mated with a television camera. TISEO is an aid to positive long-range visual identification of airborne or ground targets. In addition, Pave Spike and Pave Tack target designation systems give the F-4E the capability to employ precision laser-guided munitions, day or night. Over 1,400 E models are flown by the Air Forces of Japan, South Korea, Egypt, Israel, Greece and Turkey, as well as the United States.

Although the F-4 has served in the tactical air forces over 20 years, F-4s are still flying in the USAF and the ANG. Specifications for the F-4 are provided in Appendix A.

3.3 Units, Missions, and Operations

3.3.1 Host Unit

The 831 AD is responsible for the rapid deployment of forces in response to contingency tasking. Direct operational commitments include every conventional and unconventional weapons system to support surface forces, maintaining air superiority and suppressing surface-to-air missiles and associated air defense electronics radiation; training German Air Force aircrews under the U.S. Security Assistance Program; training USAF aircrew members for integration into F-4E and F-4G units worldwide; tactical air operations in support of the Army NTC and 27 TASS, to include host base facilities; plus manage the human, fiscal and material resources needed to carry out directed operational commitments.

3.3.2 Flying Organizations

37 TFW: The 37 TFW is the sole TAC unit tasked with the defense suppression mission. The demanding "Wild Weasel" mission calls for specially trained crews and unique aircraft to hunt down and destroy enemy air defense systems. The wing's two operational squadrons (561 TFS and 563 TFS) are dedicated to instant deployment worldwide. The wing's training squadron (562 TFTS) is the only Air Force unit that trains aircrews for the "Wild Weasel" mission. In addition to maintaining a high state of readiness, the 37 TFW also cooperates with DET 5, 4443 TEG, in testing new "Wild Weasel" munitions and tactics as well as future enhancements to the F-4G aircraft.

35 TTW: The 35 TTW provides F-4 combat/replacement training for aircrew members from the United States, Germany, and other Allied Air Forces. It plans and exercises operational control of all tactical air and tactical air control units employed during joint military exercises at the U.S. Army NTC (Air Warrior). It provides air defense forces in support of the Southwest Air Defense Sector. It also ensures the organization, training, administration, and logistical support of all assigned personnel.

27 TASS: The 27 TASS operates an airborne forward air controller (FAC) program which employs OV-10A Bronco Aircraft. The primary mission of FAC is to provide a tactical interface between the Army ground commander and fighter aircraft in a close air support role with friendly forces.

DET 1, 144 FIW: DET 1, 144 FIW, maintains F-4D aircraft on alert to intercept, identify and provide air defense against enemy aircraft. With headquarters in Fresno, it is a part of the California ANG. The unit has been a part of the George community since April 1981.

3.3.3 Current Flight Operations:

George AFB has a vital flying mission consisting of operational flying of F-4D fighter, F-4E/G "Wild Weasel", and OV-10A observation FAC aircraft to maintain a state of operational readiness. In addition, a large number of transient aircraft conduct operations from the runways at George AFB. The principal aircraft operating from the Base and the annual flying program for 1988 are summarized in Table 3-1.

TABLE 3-1
SUMMARY OF GEORGE AIR FORCE BASE
CALENDAR YEAR 1988 ANNUAL AIRCRAFT SORTIES

Assignment	Aircraft Type	Number LTO	Number T&G	Night Flights (%)	Operations Day	Operations Night	Total Operations
George AFB	F-4E/G	24,800	4,560	16	25,828	3,582	29,410
George AFB	OV-10	10,163	1,170	12	10,973	1,310	11,283
Transient	A-7	7,019	520	0	7,539	0	7,539
Transient	A-10	10,094	710	0	10,804	0	10,804
Transient	OA-37	2,860	350	0	3,210	0	3,210
Transient	T-38	3,760	400	0	4,160	0	4,160
Transient	F-4	7,720	1,100	0	8,820	0	8,820
Transient	OV-10	8,000	810	0	8,810	0	8,810
Transient	F-15	5,800	600	0	6,400	0	6,400
Transient	F-16	7,739	400	0	8,139	0	8,139
Transient	C-130	2,320	800	0	3,120	0	3,120
Transient	C-141	3,000	80	0	3,080	0	3,080
Transient	A-4	3,600	334	0	3,934	0	3,934
Transient	A-6	2,724	320	0	3,044	0	3,044
Transient	F-14	3,000	0	0	3,000	0	3,000
TOTALS		102,599	12,154		110,861	3,892	114,753

Notes:
1. Landings and Takeoffs (LTO) are actual departures and arrivals to the George AFB runways.
2. Touch and Go (T&G) are when the aircraft approaches the runway but does not actually land the aircraft. T&Gs are predominantly used in support of pilot training.
3. Night flights are generally conducted between 1930 hours and 2230 hours.

SOURCE: Robert Thackery, 35 TTW/DOY, Air Traffic Operations, 20 April 1989
SSgt Chavez, Wing Scheduling, 7 July 1989

3.3.4 Support Units

831 CSG: The 831 CSG commands and controls assigned units and staff activities in operating and maintaining George AFB in support of assigned, attached, and dispersed tactical units. The unit provides housing, feeding, maintenance and construction of facilities, fire protection, Base airfield management, administration, and religious services for assigned and attached personnel. The unit also operates a consolidated Base personnel office with full range of career guidance and control, personnel data automation, and training. The 831 CSG provides a broad spectrum of morale, welfare, and recreation programs and facilities and controls and maintains law enforcement and Base security. Additionally, the unit is responsible for ensuring the installation is in compliance of all federal, state and local environmental regulations.

831 AD/RM: The 831 AD/RM is responsible to the Commander, 831 AD, for comptroller, contracting, supply, transportation and resource plans that support Base activities. The unit ensures programming, distribution, and utilization of resources to provide maximum support of Base missions. The Commander serves as principal advisor on resource acquisition, planning, budgeting, distribution and disposition.

831 Med Gp: The 831 Med Gp promotes and maintains a combat-ready force through comprehensive health care for the 831 AD. It provides or arranges for the highest quality health care possible within resources to authorized beneficiaries. It maintains and is prepared to deploy selected health care elements to wartime and peacetime contingencies. It provides staff assistance and training to specified ANG and Air Force Reserve units. The 831 Med Gp has been in operation since 1963, with an original square footage of 49,772 feet. New construction began in 1982 and was completed 1 December 1984, adding 92,436 square feet. Outpatient services include Aeromedical Services, Primary Care, Pediatrics, Surgery, Orthopaedics, Internal Medicine, Obstetrics/Gynecology, Optometry, Mental Health, Immunizations, Allergy and Dental Care. Inpatient Services are Surgery and Obstetrics with 25 beds available. It promotes professionalism, leadership, and opportunities for growth for members of the 831 Med Gp.

DET 5, 4443 TEG (Tenant): The primary mission of DET 5, 4443 TEG, is to conduct TAC-directed F-4G test and evaluation programs, to include Operational Test and Evaluation and Tactics Development and Evaluation. Additionally, DET 5 provides test support to other major commands and specific agencies for Developmental Test and Evaluation, Qualification Test and Evaluation and Initial Operational Test and Evaluation. Operating at George AFB since April 1980, it has three F-4G aircraft assigned, with its headquarters at Eglin AFB, Florida.

4.0 DESCRIPTION OF THE EXISTING ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

4.1 Topography

George AFB is located on a broad, nearly flat part of the Victorville Fan and is bordered on the east by the Mojave River. The general topography of George AFB is desert plain. The average elevation of the Base is approximately 2,900 feet mean sea level (MSL). This topography is mostly characterized by zero slope, changing to hills towards the northwest corner with major and minor drainages to the east and south.

The eastern half is characterized by an extensive hill gradually sloping east towards the Mojave River and valley system with one major drainage channel running from the northwest to the southeast and becoming gradually steeper to the south.

One arroyo bisects the Northeast Disposal Area located north of the northeast-trending runway (Runway 03/21). The channel of this arroyo is approximately 15 feet wide near the northern boundary of the air base and more than 100 feet wide where the arroyo discharges into the Mojave River wash. The arroyo is incised approximately five feet into the surrounding alluvial deposits. It is fed by the outfall ditch from the Base, numerous gullies, and a smaller drainage ditch which originates from the Fire Fighting Training area.

Implementation of the proposed aircraft and personnel reductions will have no effect on the existing topography of the installation.

4.2 Geology and Soils

George AFB is located on the desert floor about 1.4 miles southwest of the Mojave River. The closest uplands (Quartzite Mountain) lie about two miles east of the Base. The Shadow Mountains are located six miles to the northwest. The local terrain is nearly flat and grades down toward the north at 20 feet per mile.

The western Mojave Desert is a topographically closed basin characterized by broad expanses of alluvium and uplifted, sometimes fault-bounded, blocks of indurated bedrock. Most of the alluvium is composed of a mixture of gravel, sand, silt and clay that has been eroded from the mountains south of the Basin. Drilling and well installation programs conducted at George AFB have encountered alluvial fan and fluvial deposits that contain and transmit groundwater. Three major geologic units occur at the Base: the basement complex, fan deposits, and Mojave River alluvium.

The western Mojave Desert is bordered by major faults (i.e., San Andreas and Garlock), as well as cut through by several major northwest trending breaks. The closest known capable faults (potentially active) are the Helendale (11.5 miles to the northwest) and the Mirage Valley (12 miles to the northwest). Neither of these faults have ruptured the surface historically, but the Helendale has produced numerous moderate to small magnitude earthquakes in the last 50 years. For purposes of this EA, the Base does not lie in a known active fault zone. The potential for direct surface fault rupture is considered nil. (GEOTECHNICAL INVESTIGATION, SOILS INTERNATIONAL, INC, SEP 88)

(Hydrological Studies in Support of Jurisdictional Determination for Application No. 29163)

Geology and soils would neither impact or be impacted by the proposed action.

4.3 Hydrology

Groundwater in the Victor Valley area of the desert originates as infiltration from and off of the San Gabriel and San Bernardino Mountains, as well as from major water courses. The water yielding zones of the alluvial deposits are divided into two aquifers: "Upper" Aquifer (above elevation 2,600) and the "Regional" Aquifer (below elevation 2,600). The groundwater in the Upper Aquifer percolates downward through a low vertical permeability aquifer under a strong vertical gradient. There is some indication that perched conditions may occur locally, although they do not greatly affect the overall behavior of the Aquifer. The Regional Aquifer refers to a zone which is not subject to local downward vertical percolation (and vertical gradients) but is under the influence of horizontal gradients associated with the regional groundwater flow. The groundwater beneath George AFB moves to the northeast through the Upper Aquifer and to the north through the Regional Aquifer.

About 92 percent of the long-term recharge to the Mojave River basin originates in the San Bernardino Mountains. Tributary runoff from the San Gabriel Mountains contributes about five percent of basin recharge. The remaining three percent is derived as underflow from adjacent areas.

Hydrology would neither impact nor be impacted by the proposed action.

4.4 Cultural Resources

The number of cultural resources studies performed at George AFB has been very few in number. In FY 89 (Dec 88 - Jan 89), an Archeological Resources Assessment was completed by Mr John Murray, staff archaeologist, U.S. Army Corps of Engineers, Los Angeles District, for the Runway Repair and Replacement (17/35) construction project. No significant cultural resources were identified within the boundaries of the study area (approximately 350 acres). One isolated find was noted, and its location has been documented with the Archeological Information Center, San Bernardino County Museum. It is not eligible for nomination to the National Register of Historic Places.

Impacts to cultural resources primarily occur as a result of actions that disturb the ground surface or increase the potential for unauthorized artifact collecting or vandalism of archaeological and historical sites. The proposed action will not result in an increase of ground disturbance on George AFB. Although an archeological survey of the entire installation has not been completed to date, potential cultural resources which may exist will neither impact nor be impacted by implementation of the proposed action.

4.5 Terrestrial Environment

The vegetational habitat of the Base reflects the climatic conditions of an upland desert environment. The wildlife in the vicinity of George AFB also reflects this environment with both desert and riparian species present.

4.5.1 Vegetation

The most predominant type of vegetation is the creosote bush scrub which includes creosote bush, cheesebush, burroweed, ricegrass, and mormon tea. This type of vegetarion is typically found in the undeveloped areas of the base. Russian thistle or tumbleweed is often found growing in disturbed areas.

Another type of vegetation found on and around George AFB are plants of the joshua tree woodland community. This community includes the joshua tree, boxthorn and bladdersage. Riparian vegetation, including cottonwoods and willows, can be found along the eastern border of the Base and along the Mojave River.

Willows and cottonwoods can be found flanking the river channel near George AFB. This predominant habitat requires permanent flowing or standing water. Small isolated pockets of this habitat, primarily cattail rushes and sedges, can be found in the river channel and in the vicinity of the old George AFB wastewater percolation ponds.

4.5.2 Wildlife

Wildlife in the vicinity of George AFB includes both desert and riparian species such as black-tail jackrabbit, Audubon cottontail, and antelope ground squirrel. More than 100 bird species are present in the area, including hawks, owls, quail, flycatchers, larks, warblers, sparrows, and blackbirds. Other wildlife includes toads, treefrogs, lizards, snakes, ground squirrels, pocket mice, and raccons. There are no fish species known to occur on-base. (J.M. Montgomery, 1988)

Several rare and endangered species may be found on and around George AFB. Table 4-1 identifies those species that are classified either by the State of California or Federal codes. The desert tortoise, which is listed as Threatened by the State of California, is the only species within this category confirmed to inhabit the Base (low density).

4.5.3 Environmental Consequences

There is potential for a positive impact in terms of disturbance of wildlife as result of reduced aircraft noise and emissions. However, this impact will be minimal. Overall, the terrestrial ecology will neither impact nor be impacted by the proposed action.

TABLE 4.1

SENSITIVE, RARE, THREATENED OR ENDANGERED SPECIES
THAT MAY BE FOUND IN THE VICINITY OF GEORGE AIR FORCE BASE

Common Name	Scientific Name	Status	
		Federal	State
ANIMALS			
Mohave tui chub	Gila bicolor mohavense	E	E
Mohave ground squirrel	Spermophilus mohavensis	2	T
Desert tortoise	Gopherus agassizi	2	T
Western pond turtle	Clemmys marmorata	2	CSC
Mohave snail	Helminthoglypta mohaveneana	2	
Copper's hawk	Accipiter cooperii		CSC
Ferruginous hawk	Buteo regalis	2	
Swainson's hawk	Buteo swainsonii	2	T
White-faced ibis	Plegadis chihi	2	CSC
Long-billed curlew	Nemenius americanus	2	
Western yellow-billed cuckoo	Coccyzus americanus occidentalis	2	T
Tricolored blackbird	Agelaius tricolor	2	
Spotted bat	Euderma maculata	2	
Least bell's vireo	Vireo bellii punsillus	E	E
Summer tanager	Piranga rubra		CSC
Willow flycatcher	Empidonax traillii		CSC
Bendire's thrasher	Toxostoma benderei		CSC
Le Conte's thrasher	Toxostoma lecontei		CSC
Mohave vole	Microtus californicus mohavensis		

TABLE 4.1- Continued

Common Name	Scientific Name	Status federal	State
PLANTS			
Mohave woolly sunflower	Eriophyllum mohavense	2	
Desert cymopterus	Cymopterus deserticola	2	
Barstow monkeyflower	Mimulus mohavensis	2	
Alkali mariposa-lily	Calochortus striatus	2	
Parish's alkali grass	Puccinellia parishii	2	

3.2.1

E - Endangered
T - Threatened
CSC - California Department of Fish and Game Species of Special Concern
2 - Federal Candidate Species, Category 2(Taxa which existing information indicates may warrant listing, but for which substantial biological information to support a proposed rule is lacking).

Source: U.S. Fish and Wildlife Service, June 1986 and March 1987.
California Department of Fish and Game, March 1987.
Updated June 1989.

4.6 INFRASTRUCTURE

This section addresses water, wastewater, stormwater drainage, electricity, gas, solid waste, and fire protection.

4.6.1 Water

The Base's water supply requirements are presently being fulfilled by a well system located adjacent to the Mojave River channel. The Base pumps water for municipal, industrial, and irrigation purposes on Base property. The existing wells are located on land owned by the City of Adelanto and leased by the U.S. Government on behalf of George AFB. Groundwater, within the vicinity of the well field, is at a depth of about 260 feet based upon widely scattered water well data. Shallow, perched conditions locally exist however.

(Draft EA for Upgrading the George AFB Wastewater Treatment Facility)

The well field consists of seven wells located approximately 2.5 miles east of the main gate on Turner Road. These wells pump to two ground storage tanks with a total capacity of 300,000 gallons. Booster pumps bring the water to the water plant where it is chlorinated and then stored in three ground tanks with a total capacity of 1,050,000 gallons. Water is pumped from there to an elevated storage tank with a capacity of 500,000 gallons and to the Base distribution system.

Total production from the well field was 3,642.47 acre feet (1,186,903,000 gallons) in 1988. Daily water demands at George AFB vary from a low of 1.5 million gallons per day (mgd) in January to a high of 6.5 mgd in August.

(Draft EA for Upgrading the George AFB Wastewater Treatment Facility)

Water use at George AFB would be reduced slightly due to the inactivation of the 563 TFS. However, the proposed action will not change any of the large water consumption processes on-base (i.e. cooling, housing, irrigation); therefore, the impact on water supply requirements is expected to be minimal.

4.6.2 Wastewater

Industrial and domestic wastewater generated at George AFB is routed through two interceptors to the Victor Valley Wastewater Reclamation Authority (VVWRA). The VVWRA facility has capacity to treat 4.8 mgd and discharges to the Mojave River. George AFB contributes approximately 0.80 mgd to the facility at an annual cost of approximately $250,000. The VVWRA plant also serves several nearby communities. Because of recent population growth in the communities, the VVWRA facility is approaching its capacity and is adding on to the existing facility.

George AFB generated for FY 88 approximately 289,145 thousands of gallons of wastewater at a total cost of $247,820 dollars.

The proposed aircraft change will not decrease substantially the character of the industrial wastewater. The quantity of the domestic stream will decrease slightly, thus decreasing the load on the already strained VVWRA facility.

4.6.3 Storm Water Drainage

Storm runoff for the Base (exclusive of the airfield) is collected from ground surfaces and transported by street gutters to an outfall ditch that runs parallel to the eastern boundary of the Base.

The existing storm drain system for the airfield consists of pipes ranging in size from 12 to 60 inches. Most of the runway and taxiway surface flow is collected by means of inlets and conveyed by pipes to the same outfall ditch. Flow from the outfall ditch is directed toward the desert where a portion eventually filters into the aquifer surrounding the Mojave River. Rarely, if ever, does surface flow from the ditch actually reach the River as surface flow.

(Draft EA for Upgrading the George AFB Wastewater Treatment Facility)

The storm water drainage system will neither impact nor be impacted by the proposed action.

4.6.4 Electricity

George AFB is supplied with 4,160 volt, three-phase electrical power by the Southern California Edison Company. This power is furnished through the Base substation from the Victorville substation through an automatic transfer switch. A 2,400-volt line from the City of Adelanto feeds power to several facilities on the western portion of the Base.

The Base consumed for FY 88, a total of 55,293,000 kilowatt hours at a cost of $1,527,315.

Numerous standby diesel and gasoline powered generators, ranging in capacity from 12 to 500 kilowatts are available to support mission essential facilities on the Base.

The proposed aircraft change will not decrease substantially the Base's electrical consumption.

4.6.5 Natural/Propane Gas

The primary heating fuel for the Base is natural gas, supplied by Southwest Gas Corporation. It is estimated that the annual consumption rate for FY 1988 was 274,100 thousand cubic feet. Several facilities are heated by propane gas, which is consumed at an estimated rate of 8,000 gallons annually.

The proposed aircraft change will not decrease substantially the Base's gas consumption.

4.6.6 Solid Waste

George AFB generates a total of 121,800 yards of waste which is collected by a contractor and disposed of at the Victorville landfill at an annual cost of $405,200.

The proposed aircraft change will not decrease substantially the amount of solid waste generated by the installation.

4.6.7 Fire Protection

George AFB maintains its own fire department. This department provides fire protection and prevention services to the Base. Units from the Base also respond to large fires in the Victor Valley area. The George AFB Fire Department shares mutual aid agreements with the Cities of Victorville, Adelanto, Hesperia, Town of Apple Valley and the California Department of Forestry Fire Departments. In the past several years, the Base Fire Department has not required outside assistance. The Fire Department presently has a staff of 43 military and 18 civilian personnel.

The proposed aircraft reduction will have no affect on the number of vehicles, personnel or services provided by the Fire Department.

4.6.8 Environmental Consequences

The proposed inactivation of the 563 TFS would cause a reduction in the number of people residing on-base, and demand for infrastructure services would thus be reduced. However, the impact on infrastructure would be small and short-lived. Since the demand for on-base housing is high, the spaces vacated by members of the 563 TFS would be quickly occupied by other military personnel residing off-base.

In summary, the proposed action would have a negligible impact on infrastructure.

4.7 Transportation:

The 37 TFW presently has assigned a total of 143 various types of vehicles, i.e., sedans, metros, pickups, bobtails, vans, etc. Implementation of the proposed deactivation/consolidation of the 37 TFW will result in an excess to George AFB of 35 vehicles, disposition of which will be made by HQ TAC.

The largest impact will be on privately-owned vehicles operated on George AFB. Congestion should be alleviated approximately 14 percent during peak traffic periods between the hours of 0630 to 0730 and 1600 to 1700 during normal duty days. Parking will also be less congested throughout the Base and maintenance complex, especially in the area where the 563 TFS is presently located in Building 717A.

Law enforcement, in regards to traffic control, will not be affected by the proposed action. Current plans are to maintain the level of service as they are.

Note: Figures from the November 1987 Military Traffic Management Command Transportation Engineering Agency Report, SE-87-6a-20, were used for baseline statistics in order to calculate percentages.

4.8 Noise

4.8.1 Contribution of Operations to Ambient Noise Levels

Noise associated with George AFB activities is characteristic of that associated with most USAF base flying operations. The George AFB complex is actually a small community within itself. During periods when aircraft activity is absent, noise at the Base is typically the result of shop activities, maintenance operations, ground traffic movement, occasional construction work and similar activities. Resultant noise is almost entirely restricted to the Base and can be considered comparable to that which might occur in adjacent community areas. It is only during periods of aircraft activity that this situation differs.

Noise associated with aircraft activity at George AFB occurs during aircraft engine warm-up, maintenance testing and during taxiings, takeoffs, approaches and landings. In addition to the F-4D/E/G and OV-10A aircraft, flying operations at George AFB involve several other types of Base-assigned and transient aircraft activity. The Air Installation Compatible Use Zone (AICUZ) Study for the Base indicates that the collective operation of all of these aircraft contributes the greatest amount of Base-generated noise to the nearby off-base areas. This situation is represented by the noise contours shown in Figure 4-1 which denotes the Community Noise Equivalent Levels (CNEL) in decibels (dB) at ground elevation, based upon current operation (1989 AICUZ). These contours were determined by the Air Force Civil Engineering Services Center (AFESC) at Tyndall AFB, Florida, using a computerized methodology which considers the repetition of aircraft operational events as well as the location, flight path, and time of day in which the event occur.

4.8.2 Compatibility of Land Use

Like most USAF installations, the airfield at George AFB was constructed on a site removed from the local community to avoid land use and airspace conflicts. However, as is often the case, urban development has occurred causing some incompatible land usage around the airfield.

Most of the land in the area exposed to noise from aircraft operations at George AFB is undeveloped desert. This land use is compatible with the current level of noise exposure. However, the trend is toward conversion of desert areas to residential development which is more sensitive to noise.

George AFB is surrounded by the incorporated Cities of Adelanto and Victorville along with lands which lie within the unincorporated areas of San Bernardino County. The immediate area is one having a low population density with some localized medium density areas within the City of Adelanto.

Directly north of George AFB is a fairly large area of vacant rural land which the County has zoned desert living. The parcel size is limited to a minimum of two and one-half acres but the predominate size is 40 acres.

West of the Base is the City of Adelanto whose city limits are contiguous to the west boundary line of the Base. The City area is about 23,325 acres or approximately 36.5 square miles. However, only about eight square miles or about 5,120 acres of the central portion is actually developed. It should be noted that the present population of the City of Adelanto is 11,000 which would yield a density of three people per acre within the inhabited area. This development encompasses churches, schools, business and various types of residential uses. Growth is taking place in the southern and eastern portions of the City which will represent the greatest potential conflict. Residential areas of Adelanto are exposed to noise levels between 70 and 75 dB while commercial areas are exposed to noise levels between 65 and 80 dB.

Northeast and east of the Base lies the Mojave River, with a meandering flowing stream contained within its 1,000-foot width. The land on either side is being used for limited agricultural purposes. There are several large pear orchards and farms devoted to raising alfalfa. East of the Mojave River the land is utilized by Riverside Cement for the mining and manufacture of cement. Two small communities, Oro Grande and Helendale, contain a total of about 100 private homes and are located between the river bottom lands and the low hills east of old U.S. Route 66. Residential areas in Oro Grande are exposed to noise levels between 65 and 70 dB.

The area south and southeast of the Base is within the planning jurisdiction of the City of Victorville. The City of Victorville has a population of 31,040 with land area of 25,600 acres or 40 square miles. However, in 1973 the city annexed some 5,000 acres directly south of the Base which has a permanent population of less than 100 people. This western addition is directly south of the Base and is almost entirely vacant rural land. The majority of parcel sizes within this area are held to a minimum of two and one-half acres with five and 10-acre parcel sizes permitted in the areas of flood hazards and steep slopes. A limited portion of this lightly developed land directly south of the Base is exposed to noise levels between 65 and 70 dB.

A review of the existing land uses within the immediate area surrounding the Base with the exception of the City of Adelanto shows that the land is vacant rural or agricultural, but with the continued development of the Cities of Victorville and Adelanto, more encroachment is expected.

4.8.3 Projected Noise Levels and Environmental Consequences

An analysis prepared by the AFESC at Tyndall AFB, Florida, using a computerized methodology which considers the frequency, duration and time of occurrence of aircraft operational activity was used to compare the impacts of current and proposed mission activities. The results of this analysis indicate that the area exposed to CNELs greater than 65 dB would decrease by approximately nine percent if the proposed aircraft drawdown were implemented. The results of this analysis are depicted graphically in Figure 4-2 which indicates the noise footprints predicted to result from future aircraft operations. Table 4-2 compares the total land area, in acres, encompassed by the various contours for the current and proposed aircraft operations. The predicted reductions are due to the decreased number of aircraft, and estimated sortie rate decreases.

Annoyance is the most significant human response to noise resulting from aircraft overflights. In this case, lower noise levels from the proposed action will be less than the existing noise characteristics. The percentage of people annoyed is expected to decrease with the withdrawal of the 24 F-4E. Therefore, the noise level change will be viewed as a positive impact on the surrounding communities.

TABLE 4-2

NOISE CONTOURS

AREA CALCULATIONS

CNEL CONTOUR INTERVAL	AREA CALCULATION 1989 AICUZ (ACRES)	AREA CALCULATION AFTER CONSOLIDATION (ACRES)	REDUCTION (ACRES)	PERCENT REDUCTION
60.0	69363.2	57838.0	11525.2	16.6%
65.0	33995.5	30648.3	3347.2	9.8%
70.0	15541.7	13990.9	1550.8	9.9%
75.0	7385.9	6883.8	502.1	6.7%
80.0	3425.2	3168.5	256.7	7.4%
85.0	2108.6	2041.7	66.9	3.1%
TOTAL	131820.1	114571.2	17248.9	13.1%

REDUCTION AFTER CONSOLIDATION = 17249.8 ACRES OR 13.1%

4.9 Airspace

4.9.1 Accident Potential

At both ends of the George AFB runways, a clear zone and two accident potential zones (APZ) have been designated. The clear zones encompass an area 3,000-feet wide and extend 3,000 feet from the ends of the runway. Within the clear zone areas, the overall risk of aircraft accidents is so high that the necessary land use restrictions would prohibit reasonable economic use of the land. For this reason, the USAF has acquired the expanded clear zone on both ends of the runways. APZ Is, areas 3,000 feet wide extending along the runway axis for a distance of 5,000 feet beyond the clear zones, are less critical than the clear zones but still possess a significant risk factor. APZ II, also 3,000-feet wide and extending 7,000 feet beyond the boundary of APZ I to 15,000 feet from the runway threshold, is less critical than APZ I but still possesses some risk. The AICUZ Study provides land use compatibility guidelines which allow reasonable economic use of the land in APZ I and II.

The implementation of the proposed action would be expected to have no impact on accident potential. The aircraft drawdown would not effect the extent of the Clear Zones, nor the APZs, which have been established for George AFB, or the degree of compatibility of existing or future land use within these zones.

A description of the existing airspace utilization by George AFB assets on the 10 military training routes (MTR) and two military operating areas (MOA) is included in Appendix A.

4.9.2 Safety and Airspace

The proposed action will involve a decreased utilization of MTRs and MOAs by George AFB. It is anticipated that other military installations will schedule flight time made available by the drawdown of the 24 F-4Es. While additional efforts in airspace management and coordination would be necessary for the USAF, no impact on air traffic safety or airspace utilization is anticipated.

4.9.3 Aircraft Operations

Ten MTRs, one MOA and one restricted area will be affected by the proposed action. These are the Complex 4 MOA, Bullion Mountains Restricted Area (R-2501), and training instrument routes (IR) 204, 233, 256, 297, 298, and visual routes (VR) 1214 through 1218.

The areas and routes impacted by the action are located in San Bernardino, Los Angeles, Kern and Inyo Counties, California and in eastern Nevada. Figure ___ shows the locations of Complex 4 MOA, R-2501, and the 10 MTRs. Four training routes extend into Nevada.

George AFB fighter sorties are anticipated to decrease by approximately 22 percent and 20 percent respectively within the Complex 4 MOA and the Bullion Mountains Restricted Area (Table 4-3). A decrease of approximately 20 percent of George AFB fighter sorties is expected for each MTR, except for IR 204, which will no longer be used for sorties. Table 4-4 shows the existing and projected George AFB sortie activity in the 10 MTRs. Only fighter sorties are listed since these routes are used exclusively for this type of sortie.

A description of aircraft operations within the Complex 4 MOA, R-2501, and the MTRs is provided in Appendix B.

TABLE 4-3

EXISTING AND PROJECTED F-4 OPERATIONS IN MOAS AND RESTRICTED AREAS ASSOCIATED WITH GEORGE AFB

	Existing	Future	Percent Change
Complex 4 MOA			
Fighter Sorties	26,117	20,645	-22
Bullion Mountains			
Fighter Sorties	263	211	-20
TOTAL SORTIES	26,380	20,908	

Notes: 1. George AFB presently has assigned five squadrons of F-4s; the loss of one squadron will reduce operations by 20 percent.
2. The 37 TFW number of sorties will decrease by 5,472 due to the drawdown of the 24 F-4s

Source: 37 TFW/DOO Scheduling, Capt Fowle
Special Use Airspace Utilization Report (35 TTW/DOY)

TABLE 4-4

EXISTING AND PROJECTED OPERATIONS IN MTRS
ASSOCIATED WITH GEORGE AFB

Fighter Sorties	Existing	Future	Percent Change
IR 204	1	0	
IR 233	31	27	
IR 256	20	16	
IR 297	246	173	
IR 298	222	178	
VR 1214	188	150	
VR 1215	952	762	
VR 1216	508	406	
VR 1217	2,886	2,309	
VR 1218	211	162	
TOTAL FIGHTER SORTIES	5,265	4,183	20%

Notes: 1. Decrease of 20 percent of the overall George AFB operations.
2. Data compiled over a 1-year period.
3. Table reflects low level flights only and does not correlate to the previous table.

Source: Low Altitude Training Route Utilization Log (Airfield Management)

4.10 Air Quality

There will be an insignificant change in air emissions due to aircraft maintenance, heating and power production, the operation of motor vehicles and other support functions. There will be a significant effect on the emissions from aircraft flying operations and fuel evaporation losses. Table 4-5 details the change in emissions based on the 21.9 percent reduction in sorties.

TABLE 4-5

REDUCTION IN AIR EMISSIONS
DUE TO REDUCED F-4 ACTIVITY

TYPE OF EMISSION	1988 EMISSIONS (US TONS)	EMISSION REDUCTION (US TONS)	FUTURE EMISSION (US TONS)
EVAPORATIVE FUEL LOSSES			
HYDROCARBONS	90.1	19.7	70.4
AIRCRAFT FLYING OPERATIONS			
PARTICULATES	27.6	6.0	21.6
OX	46.1	10.1	36.0
CO	854.0	187.0	667.0
HYDROCARBONS	299.0	65.5	233.5
NOX	253.0	55.4	197.6

Notes: 1. SOX = Oxides of Sulphur
2. CO = Carbon monoxide
3. NOX = Oxides of Nitrogen
4. This information is based on data found in the George AFB Emission Inventory for 1988.

4.11 Hazardous Materials

The effect on the use and disposal of hazardous materials due to the proposed action will be minimal. There may be some reduction in the volume of waste oil/petroleum based-fluids that are turned in for recycling, but this reduction should be less than 10 percent of the total volume. There will be little impact on the amount of paint used and paint waste generated. The maintenance community predicts little or no reduction in aircraft painting due to the reduction in the number of aircraft.

4.12 Health and Safety

The 831 AD and civilian employees enrolled in the Occupational Health Program will receive termination physical examinations, if indicated.

Consolidation of the 37 TFW and 35 TTW will have no great impact on the Occupational Health Program. Industrial facilities which are currently separate identities, such as the 35th Corrosion Control Shop and the 37th Corrosion Control Shop will be consolidated into one shop. Industrial hygiene data will remain current for each facility in which the operations do not change. Baseline industrial hygiene data must be collected in all areas where industrial operations are moved from one location to another.

Several existing risk assessment codes (RAC) can possibly be abated by relocated specific processes to locations which have adequate engineering controls. A prime example of this would be moving all 35th corrosion/painting operations to the 37th Corrosion Control facilities. This would eliminate two RAC 2s currently assigned to inadequate ventilation in the 35th Corrosion facilities.

The impact of the proposed deactivation of the 37 TFW will not have a positive or negative effect on the Safety Office. Safety awareness will continue to be a high priority with all agencies of the Safety Office. Based upon the proposed aircraft and personnel reductions, and given the current Ground Safety manning, the overall effect should be negligible. There may be a proposed reduction in the Flight Safety staff due to the consolidation. Weapons Safety will not be affected by the realignment.

4.13 Socioeconomics

This section presents an overview of the existing conditions of socioeconomic resources and potential impacts associated with the proposed action.

4.13.1 Population

The population of the Regional Statistical Area which includes George AFB, Victorville, Adelanto, Hesperia, Apple Valley, Lucerne Valley, Phelan and the surrounding unincorporated areas totaled 74,737 in 1980. This represented a growth from 1970 of 69.3 percent. The area governments have been characterized as "pro-growth" which, in part, helps to explain the rapid growth of the area. Other contributing factors have been identified as being: an influx of retirement-age people, proximity to employment centers in Los Angeles and San Bernardino Counties, low housing costs, good air quality and an expanding employment base in the local region. George AFB employs approximately 5,246 military and 945 civilian personnel. Annually, George AFB reassigns approximately 646 personnel. Currently there are approximately 2,350 retired military personnel in the local area.

In order to implement the proposed action, there will be a manpower reduction of 745 personnel, only slightly higher than the annual number reassigned. At an average of 1.43 persons per household, this results in an associated decrease of 1,065 dependents and a total decrease of 1,810 persons. Based on current ratios, 18.5 percent of the dependents (197 persons) will be of school age.

4.13.2 Employment

George AFB employs approximately 5,246 military and 945 civilian personnel. Non-USAF organizations that provide services to George AFB personnel employ an additional 174 people. The Base awards numerous contracts in the local area each year for everything from major construction to services and supplies. Economic activity as a result of personnel from the Base resulted in the creation of 5,154 jobs in the local area. Finally, an unestimated number of dependents hold jobs, both on-base and in the local communities.

Unemployment in the local area has been estimated at just slightly more than five percent as recently as 1987. The proposed action will increase employment opportunities by removing a part of the work force. At the same time, however, the number of secondary jobs created due to economic activity of the Base and assigned personnel will decrease.

4.13.3 Income

In FY 88, the USAF payroll at George AFB amounted to more than $126.2 million. The non-USAF organizations' payroll for the same year was more than $2.8 million.

The retired military in the area had an income of approximately $27 million for the same year. Contracts awarded in the local area totalled more than $88 million. The total economic impact of George AFB was $516 million.

The proposed action will result in an approximate loss to the local economy of $13.7 million. This figure amounts to a mere two percent of the economic impact George AFB has on the local economy.

4.13.4 Housing

There are 1,641 family housing units on-base, with approximately 100 of these vacant at any time due to maintenance or personnel changes. Currently, there is a waiting time of up to three months from the time a person requests on-base housing until a unit becomes available. Dormitories provide housing for 2,028 unmarried enlisted personnel. Based on the above, 3,669 of the George AFB military personnel are provided housing on-base with 1,577 living off-base.

On-base housing will be more available due to the proposed action. Of the 742 military affected by this action, 492 are in the grades of staff sergeant or below, most of whom are probably single and living in the dormitories. Almost 100 are in grades that typically buy rather than rent. Therefore, the proposed action will have a minimal effect on the rental properties in the Victor Valley.

4.13.5 Education

The school districts potentially impacted by a change in George AFB personnel and their dependents are Victor Valley Union High School District, Apple Valley Elementary School District, Victor Elementary School District, Adelanto Elementary School District and the Hesperia Elementary School District. These districts are all characterized by increasing enrollments that have necessitated the use of portable buildings and year-round school programs. A total of 10 new schools is currently projected or under construction by the Districts to meet future needs.

George AFB personnel living on-base attend elementary schools that form part of the Adelanto Elementary School District. Beyond elementary, they attend the Victor Valley Union High School District schools. Personnel living off-base are likely to live in Adelanto (19 percent), Apple Valley (39 percent), with the remainder living in other unincorporated communities.

The proposed action will result in an estimated decrease of school age population of 197 pupils. This will only minimally impact the affected school districts.

The inactivation of the 563 TFS would initially cause a reduction in the number of people residing on-base. Since the demand for on-base housing is high, the spaces vacated by members of the 563 TFS would be quickly occupied by other military personnel residing off-base. Therefore, the Adelanto Elementary Schools would only be minimally impacted.

In summary, the proposed action would have a negligible impact on education facilities within the Victor Valley.

5.0 ACRONYMS

AD	Air Division
AFB	Air Force Base
AFESC	Air Force Engineering Services Center
AFR	Air Force Regulation
AGL	Above Ground Level
AICUZ	Air Installation Compatible Use Zone
ANG	Air National Guard
APZ	Accident Potental Zone
BLM	Bureau of Land Management
BOS	Base Operating System
CEQ	Council on Environmental Quality
CNEL	Community Noise Equivalent Levels
CSG	Combat Support Group
dB	Decibels
DET	Detachment
DOD	Department of Defense
EA	Environmental Assessment
FAC	Forward Air Controller
FIW	Fighter Interceptor Wing
FY	Fiscal Year
FYDP	Five-Year Defense Plan
HQ	Headquarters
IR	Instrument Route
LTO	Landings and Takeoffs
Med Gp	Medical Group
mgd	Million Gallons Per Day
MOA	Military Operating Area
MSL	Mean Sea Level
MTR	Military Training Route
NEPA	National Environmental Policy Act
NTC	National Training Center
PAA	Primary Aircraft Authorization
PL	Public Law
POC	Point of Contact
PPE	Primary Program Element
PVSA	Panamint Valley Supersonic Area
RAC	Risk Assessment Code
RM	Deputy Commander for Resource Management
TAC	Tactical Air Command
TASS	Tactical Air Support Squadron
TEG	Test and Evaluation Group
TFW	Tactical Fighter Wing
TFS	Tactical Fighter Squadron
TFTS	Tactical Fighter Training Squadron
T&G	Touch and Go
TISEO	Target Identification System Electro Optical

TTW	Tactical Training Wing
USAF	United States Air Force
USMC	United States Marine Corps
VR	Visual Route

6.0 PERSONS AND AGENCIES CONTACTED

Robert Thackery, Airspace Manager, 35 TTW/DOY
TSgt Richard Corral, 831 AD Public Affairs
SSgt Chuck Starr, 831 AD Historian
Capt Joy K. Olexa, 831 Med Gp/Administration
Ms Patricia A. Chamberlaine, City Administrator, City of Adelanto
Capt J.D. Anderson, 37 TFW/DOO (Current Operations)
SMSgt Billie Norman, 831 CSG/DEF (Fire Chief)
Ken Kirker, 831 CSG/DEEP
Capt Baker, 831 AD/MET
SMSgt Frank E. Smith, 831 AD/LGTO
TSgt Floyld Pratt, 831 AD/LGTO
Sgt Marcella Flecher, 831 AD/LGTO
TSgt James D. Dann, 37 TFW Vehicle NCO
MSgt Terry L. Boatright, 831 CSG/SPOL
MSgt Howard S. Ragan, 831 CSG/SPOL

7.0 LITERATURE REFERENCES

Military Traffic Management Command Transportation Engineering Agency Report (SE-87-6a-20, November 1987)

Geotechnical Investigation, Soils International, Inc, September 1988

8.0 LIST OF PREPARERS AND CONTRIBUTORS

Environmental Planning and Compliance Branch
George Air Force Base

Sandra L. Cuttino, P.E.
Denise R. Caron
1Lt John G. Rodgers
Jose E. Payne
MSgt Richard Lozano
Barbara L. Teach

APPENDIX A

F-4 Specifications

Contractor: McDonnell Aircraft Company, Division of McDonnell Douglas Corporation

Power Plant: F-4C and D: Two General Electric J-79-GE-15 turbojets each 17,000 pounds thrust with afterburner.

F-4E: Two General Electric J-79-GE-17 turbojets, each 17,900 pounds thrust with afterburner.

Accommodation: Pilot and weapons system office in tandem

Dimensions:

Span:	38 feet, 7 and one-half inches
Length:	63 feet, 0 inches
Height:	16 feet, 5 and one-half inches

Weights: Empty 30, 328 pounds, 58,000 pounds gross maximum

Performance: Max speed at 40,000 feet Mach 2.0 class; Radius, surface attack, typical high-low-high profile; 250 miles Radius, air-to-air - up to 350 miles with reserve

Armament: One 20mm M61A1 multibarrel gun; provisions for up to four AIM-7 Sparrow radar guided missiles, plus four AIM-9 Sidewinder heat seeking missiles. Air-to-ground munitions can include up to 24 X 500-pound bombs of 3 X 2000-pound bombs, laser guided bombs, Maverick missiles, or nuclear weapons

APPENDIX B

AIRCRAFT OPERATIONS

Aircraft Operations

Aircraft fly at speeds ranging from low subsonic to nearly 1,400 miles per hour or Mach 2.0. Subsonic flight occurs at altitudes from 100 above ground level (AGL) to 40,000 feet mean sea level (MSL). Most flights occur in the subsonic range. Supersonic flights operate at 5,000 feet above ground level (AGL) to 40,000 feet mean sea level (MSL). Supersonic flights are limited to altitudes above 5,000 feet AGL for safety reasons and to minimize damage from sonic boom shock waves. Supersonic operations are limited to daylight hours.

Complex 4 MOA

Information on Complex 4 is summarized from the Panamint Valley Supersonic Area (PVSA) EA. The PVSA is located in the western portion of MOA 4 or Complex 4. Complex 4 is one of four MOAs in R-2508, which is approximately 90 nautical miles north of George AFB. Information is presented below for the PVSA and for the remainder of the area in Complex 4. Supersonic activity is limited to the PVSA, also known as the western portion of MOA 4.

Land underlying the PVSA is primarily mountainous and desert terrain with flora and fauna adapted to the arid environment. Over 95 percent of the land area is owned by the Federal government and controlled by the Bureau of Land Management (BLM). There are a number of active mines on the government-owned land in the Panamint Valley. The area population is generally associated with the Indian Ranch Reservation or Ballarat crossroads. The estimated population of the PVSA is less than 200 people. There are also scattered areas of privately-owned land in the PVSA.

The BLM is considering designating certain portions of the PVSA as wilderness areas. There are no wildlife sanctuaries in the supersonic area.

Because of the mountainous terrain, the majority of supersonic flights occur between approximately 10,000 feet AGL and 30,000 feet MSL in the middle two-thirds of the area. Distance and terrain generally provide a buffer between sonic booms and populated areas outside the PVSA.

The area extending 14 miles outward from PVSA is similar in topography, population, climatology and ecology. Other communities underlying portions of Complex 4 outside the PVSA include Trona, nine miles to the southeast of the PVSA, Argus, Darwin, Harrisburg, and Wildrose. These communities were not incorporated at the time of the 1980 census and population data are not available. Death Valley National Monument comprises the eastern portion of Complex 4. State Highway 178 runs north-south and connects Trona in the south to State Highway 190, which cuts through the northwest corner of Complex 4. Since supersonic flights are restricted to the PVSA, terrain and distance should muffle sonic booms from reaching settlements outside that area.

As a result of the action, George AFB total fighter sorties will decrease by approximately 22 percent in Complex 4.

Bullion Mountains Restricted Area (R-2501)

R-2501 is used by George AFB as a supersonic area to train tactical fighter aircrews in air-to-air combat. Supersonic activity is limited to the northern and eastern halves of R-2501. Information on R-2501 is summarized from the Bullion Supersonic Airspace EA.

The U.S. Government owns and U.S. Marine Corps (USMC) Combat Center controls approximately 90 percent of the land under R-2501. The land is used for a combat training area and accommodates tactical weapons ranges, other ordnance impact areas and troop bivouac areas. Another five percent of the land is owned and controlled by the BLM. With the exception of the USMC troops deployed for training operations, R-2501 is unpopulated. The land is desert terrain with flora and fauna characteristic of arid regions.

The northern boundary of R-2501 is just south of Interstate 40 and roughly follows the National Trails Highway; both are sparcely populated. Population data for Ludlow and Amboy are not available. The areas to the east and west of R-2501 are also generally sparsely populated.

The region to the south of R-2501 is more heavily populated and includes the town of of Twenty-Nine Palms and Joshua Tree National Monument. Supersonic flights are limited to an area far enough north so as to reduce the impacts on residents.

Military Training Routes

MTRs are corridors of airspace that may be several miles wide. Using these routes, pilots practice evasive tactics, which may include high speeds and frequent course changes at low levels. The floor for military use can be as low as ground level, but is usually from 200' to 500' AGL.

Print reply Monday 89/08/07 15:24
Page: 1

To: Lt John G. Rodgers From: Lt John G. Rodgers
Subject: EA on AIR WARRIOR Date: 89/08/07
Reply by: (optional) Type: X Action Info Reference
YY MM DD

---------- REPLY TO MEMO ----------
Reply to: EA on AIR WARRIOR
From: Capt Will T. Cassidy
John,
I sent it out for TAC staff coordination, with comments due back the end of the week. Over all, it looks pretty good, so I don't think it will take much to finalize it.
Will Cassidy
---------- END OF REPLY ----------

Capt, 7/0915L Aug 89

Just wanted to let you know that the DRAFT EA should be in your hands by the end of the week. I need to get it coordinated here on base and then we'll get it to you.

How does the Consolodation EA look?

JRodgers
AV 353-2971